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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,657

12/13/2004

Enzo Di Fabrizio

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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT

PAPER NUMBER

2886

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,657	<b>Applicant(s)</b> DI FABRIZIO ET AL.	
	<b>Examiner</b> /Michael P. Stafira/	<b>Art Unit</b> 2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 7/18/2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,14 and 15 is/are rejected.
- 7) ☒ Claim(s) 3 and 5-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

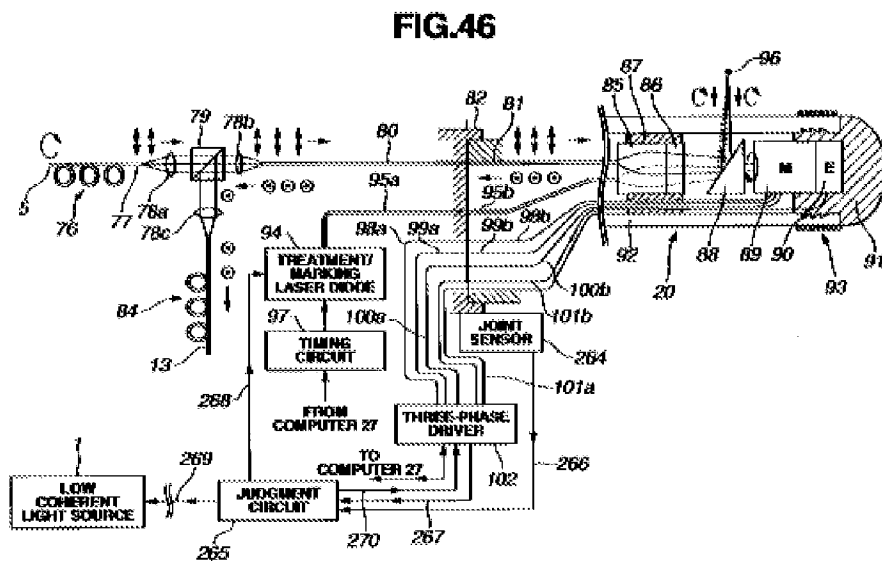
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. ('067) in view of Horii et al. ('010).

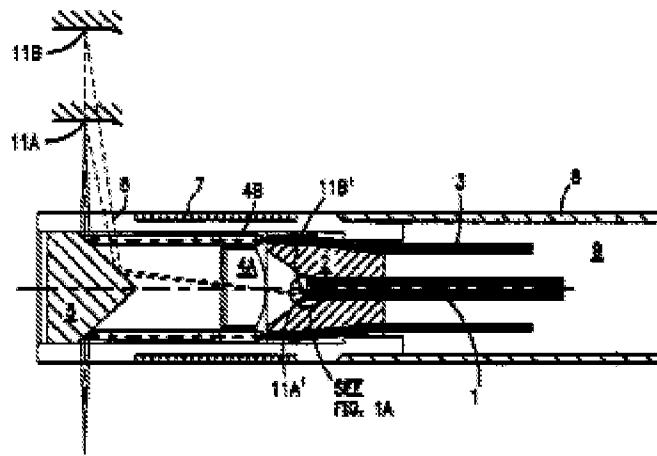
### **Claim 1**

Jensen et al. ('067) substantially teaches the claimed invention except that it does not show a light-emitting means for generating a collimated light beam. Horii et al. ('010) shows that it is known to provide a light-emitting means (Fig. 46, Ref. 5) that generates a collimated light beam (Fig. 46, Ref. 78a) for an optical scanning probe. It would have been obvious to combine the device of Jensen et al. ('067) with the collimated light beam of Horii et al. ('010) for the purpose of providing a light beam that has little loss of the optical signal, therefore increasing the sensitivity of the measurement.

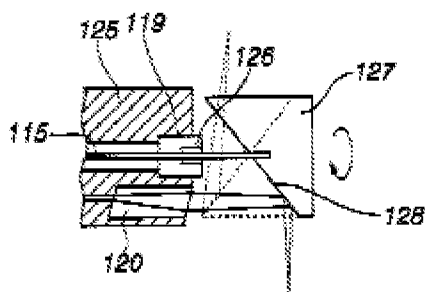
FIG. 46



Jensen et al. ('067) discloses an elongate probe element (Fig. 1, Ref. 8) suitable for being introduced into the duct and for guiding the collimated beam along a predetermined propagation direction (Col. 3, lines 52-56), reflector means (Fig. 1, Ref. 5) supported by the probe element (Fig. 1, Ref. 8) and suitable for deflecting the light beam so as to illuminate the internal wall of the duct (Col. 3, lines 52-56), and for deflecting the reflected or diffused light coming from an illuminated point (Fig. 1, Ref. 11A, 11B) of the internal wall so as to guide it along the probe element (Fig. 1, Ref. 8), and detection means (Col. 7, lines 1-10) suitable for receiving an image of the illuminated point (Fig. 1, Ref. 11A, 11B), which image is correlated with the optical distance of the point from the detection means (Col. 7, lines 1-10), and for providing a corresponding electrical signal, characterized in that the reflector means comprise a micro-mirror element (Fig. 1, Ref. 5) articulated to a distal end of the probe element (See Fig. 2), the micro-mirror element (Fig. 1, Ref. 5) being orientable so as to deflect the light beam in selectively different directions (Col. 9, lines 1-10).

**FIG. 1**

Jensen et al. ('067) substantially teaches the claimed invention except that it does not show a micro-mirror that is rotatable. Horii et al. ('010) shows that it is known to provide an optical probe with a rotating micro-mirror (Fig. 54, Ref. 128) at the end of the probe (See Fig. 54) for an optical probe for scanning. It would have been obvious to combine the device of Jensen et al. ('067) with the rotating optical element of Horii et al. ('010) for the purpose of providing a scanning ability to the optical probe, therefore increasing the area that the probe can view without moving.

**FIG.54**

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4. Claim 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. ('067) in view of Horii et al. ('010) as applied to claim 1 above, and further in view of Deichmann et al. (2003/0164952).

**Claim 2**

Jensen et al. ('067) in view of Horii et al. ('010) substantially teaches the claimed invention except that it does not show a drive unit for moving the probe and unit. Deichmann et al. (2003/0164952) shows that it is known to provide a drive unit for moving the probe unit (Para. 0062) for an optical scanning probe. It would have been obvious to combine the device of Jensen et al. ('067) in view of Horii et al. ('010) with the probe drive unit of Deichmann et al. (2003/0164952) for the purpose of providing the probe unit the ability to move into restricted areas, therefore providing reliable images of confined areas.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. ('067) in view of Horii et al. ('010).

**Claim 4**

Jensen et al. ('067) discloses a probe arm element (Fig. 1, Ref. 8) suitable for being introduced into the duct and supporting at its distal end a micro-mirror element (Fig. 1, Ref. 5) which can deflect a light beam directed along the probe element (Fig. 1, Ref. 8) so as to illuminate the internal wall of the duct, and which can deflect the reflected or diffused light coming from an illuminated point of the internal wall so as to guide it once more along the probe element Fig. 1, Ref. 8) to enable it to be received by detection means (Col. 7, lines 1-10) of the apparatus, characterized in that the micro-mirror (Fig. 1, Ref. 5) element is articulated to the

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probe arm element (Fig. 1, Ref. 8) so as to be orientable in a radial plane relative to the probe arm element (Fig. 1, Ref. 80(Col. 9, lines 1-10)).

Jensen et al. ('067) substantially teaches the claimed invention except that it does not show generating a collimated light beam. Horii et al. ('010) shows that it is known to provide a collimated light beam (Fig. 46, Ref. 78a) for an optical scanning probe. It would have been obvious to combine the device of Jensen et al. ('067) with the collimated light beam of Horii et al. ('010) for the purpose of providing a light beam that has little loss of the optical signal, therefore increasing the sensitivity of the measurement.

Jensen et al. ('067) substantially teaches the claimed invention except that it does not show a micro-mirror that is rotatable. Horii et al. ('010) shows that it is known to provide an optical probe with a rotating micro-mirror (Fig. 54, Ref. 128) at the end of the probe (See Fig. 54) for an optical probe for scanning. It would have been obvious to combine the device of Jensen et al. ('067) with the rotating optical element of Horii et al. ('010) for the purpose of providing a scanning ability to the optical probe, therefore increasing the area that the probe can view without moving.

#### **Claim 14**

Jensen et al. ('067) discloses determining the internal impression of the auditory canal (Col. 3-4, lines 52-15).

#### **Claim 15**

Jensen et al. ('067) further discloses determination of an internal impression of the auditory canal by means of an apparatus in a manner such as to produce a three-dimensional computer representation, and machine production of a piece of hearing prosthesis, under the

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control of a computer using the data relating to the three-dimensional representation (Col. 1, lines 8-22.

*Allowable Subject Matter*

6. Claims 16-17 are allowed over the prior art of record.
7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 16, the prior art fails to disclose or make obvious an apparatus for determining the internal outline of a duct or cavity having conoscope means interposed between the receiving reflector means and the detection means and suitable for producing, with the light guided by the reflector means, a holographic image with concentric interference fringes which is detectable by the detection means, the periods of the fringes being correlated with the optical distance of the illuminated point, and in combination with the other recited limitations of claim 16.

Regarding claim 17, the prior art fails to disclose or make obvious a probe for an apparatus for determining the internal outline of a duct or cavity having the micro-mirror element is rotatably articulated to the probe arm element so as to be orientable in a radial plane relative to the probe arm element, wherein the micro-mirror element is integral to one end of a lever element articulated to the distal end of the probe arm element, the free end of the lever element being operable by a control rod element which is arranged parallel to the probe arm element and can translate along its longitudinal axis, and in combination with the other recited limitations of claim 17.



Claims 3, 5-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael P. Stafira/  
Primary Examiner  
Art Unit 2886

August 1, 2008